Concept Paper # 235

Presented to the Department of Administrative Services (DAS)
Date Prepared: __12/19/12___

Name of document to be reviewed: IDPH Data Warehouse enhancement for the Environmental Public Health Tracking program

(Please check one item listed in the following two sections)

Document for review and approval:

__ **Request for Proposal (RFP)**	__ **Sole Source Procurement**
__ **Request for Service (RFS)**	__ **Statement of Work**
__ **Request for Quote (RFQ)**	__ **Staff Augmentation**
__ **Invitation to Qualify**	__ **Master Agreement Purchase**

==This concept paper was already approved to move forward with procurement through interstate agreement. The previous concept paper was # 210. The modification to this submission is that IDPH is now requesting IOWAccess funds to support the project.==

NOTE: Sole source procurements will also need authorization from DAS Procurement for this type of purchase. Please also contact DAS Procurement at this location: http://das.gse.iowa.gov/procurement/solesource%202010.pdf

Document for review only:

    __ **Master Agreement**   __ **Request for Information (RFI)**

Agency: Iowa Department of Public Health

RFP Reference #:

Release Date:

This project is requesting IOWAccess funds: Yes _x__   No ____

NOTE: IOWAccess concept papers are to be sent to Wes Hunsberger (Wes.Hunsberger@iowa.gov) for an internal DAS review.

Projected cost over $50,000?   Yes _x__   No ___

Projected agency staff hours over 750?   Yes ____   No _x__

Project Cost, Funds and Funding Source:

Please list the internal and external resources/costs for the purchase:

Internal Resources/Costs:

Title/role	Percent time dedicated to project	Cost	Grant-Funded? (Y/N)
DWH/EPHT Project Manager	75%	$66,150	N- covered by DWH funding
DWH Analyst	28%	$26,640	Y
Epidemiologist	100%	$61,119	Y
Communication/Outreach Coordinator	30%	$20,957	Y
Epidemiologist	25%	$17,359	Y
DBA	52%	$55,851	Y
IM Administrative Oversight	3% (four positions)	$12,916	Y

External Resources/Costs:
Contractual   2,485 hours x $200/hour = $497,000

Requesting $200,000 of IOWAccess funds to cover the increased contractual expense.

Timelines:

The project start date must align with those set by the Centers for Disease Control and Prevention, Environmental Public Health Tracking program. Broad project deadlines are as follows. The detailed project plan is available in Appendix A.

Action	Owner	Estimated Completion	Status as of 12/17/2012
Business requirements completion	IDPH	5/4/2012	Complete; updated as project progresses
Complete data load (back-end work)	IDPH	7/31/2012	Framework complete 12/17/12; data load completion anticipated 1/15/12
Start contractual work	Contractor	11/26/12	Started work on 11/26/12
First year of contractual work completed • All necessary IT infrastructure and architecture upgraded and updated as needed (e.g., SharePoint 2013) • Public and secure portals complete • All EPHT required data loaded; data measures calculated • Metadata tool functional and	IDPH, Contractor	5/31/12	Project began on-time and is slated to be completed by 5/31/12.

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integrated with the solution

Goal:

The overarching goal of this project is enhancement of the IDPH Data Warehouse (DWH) to meet the needs of the Environmental Public Health Tracking (EPHT) program. In 2010, Iowa became the 22nd state awarded the Centers for Disease Control and Prevention (CDC) Environmental Public Health Tracking grant. This is a four-year award with two years allocated for planning and two years for design and implementation. IDPH is in the second year of planning and is working to secure a contractor for the development phase starting in August of this year.

At the start of the EPHT project, it was determined that the EPHT solution could easily integrate with the department's data warehouse. Significant changes to the back-end architecture are necessary to meet the needs of both the EPHT project and that of IDPH staff. Front-end application changes will improve and expand access to public health data through the use of interactive toolsets, parameterized and canned reports.

The EPHT project involves the integration of environment and health data into the DWH, configuring Iowa data in the format of 78 nationally derived indicators, and the eventual public access to these indicators[1]. The indicators must be made accessible to the public through a public access and secure portal prior to the summer of 2013.

The EPHT program has a mandate to provide environmental health data to both the general public and expert users. These two types of users have different levels of understanding on health and environmental issues. Because of this difference, IDPH needs to provide both public and secure portals. The EPHT Program defines a portal as a web site that functions as the interface for accessing data and supporting information (e.g., metadata). Portals at the national and state levels will allow for public access to unrestricted data and role-based/use-based access to restricted data. The public portal will make appropriate data available to a general user. While public portals may have static web pages and reports, these portals are expected to offer additional features such as parameterized reports. The secure portal makes more detailed information available only to authorized users. Authorized users could include state and local health department staff, staff of other government agencies, academic researchers, or non-profit advocacy groups.

IDPH has taken a unique approach with this project. The department recognized the potential to reform significant aspects of how our agency manages data, though keeping the goals of the EPHT project at the forefront. In order to define both department and stakeholder needs for project integration, the DWH and EPHT teams conducted a comprehensive data needs assessment in the fall of 2011. With the results, a business plan and subsequent business requirements were drafted.

The general goals of this project are as follows:

- **Upgrade to SharePoint 2013.** Several programs within the department use the SharePoint platform and will benefit from upgrading to SharePoint 2013. The current DWH was built on the SharePoint platform, and any future warehousing solution must be built using Microsoft toolsets. Additional tools are available with the upgrade to SharePoint 2013 and the purchase of the products and licenses required has already been completed.

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[1] http://www.cdc.gov/nceh/tracking/

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- **Establishment of a data mart.** IDPH is redesigning the back-end architecture of the DWH to meet the data access needs of internal staff. As datasets are provided to Information Management (IM), source files are being created for access by internal staff. The source files will be read-write protected and access will be tracked by an audit trail. The mart will also host data files that comprise the existing DWH.
- **Development of a secure portal for access to IDPH data**. Though IDPH has an existing data warehouse with secure user access, the warehouse will be redesigned to include additional datasets, better metadata, improved reporting functionality, and standard measures for data display. Access will be expanded to include the stakeholders identified by the EPHT program.
- **Development of a public portal for access to IDPH data**. As previously stated, the EPHT project requires public access to environmental and health data through a web portal. The portal will enable public users to interact with data. Alike the secure portal, data accessible in the public portal will include datasets currently in the DWH.

Background:

The DWH is a repository of point-in-time public health events and does not include individual identifiers (i.e., SSN, Medicaid) that may allow the tracking of an individual over time. Data are available at the county–level. Data are refreshed annually following a review and close-out process unique to each dataset. These data are final, non-provisional datasets and include the following content areas: birth events, death events, inpatient hospital discharge events, census population estimates, and Behavioral Risk Factor Surveillance surveys from 2000 through present.

Users are categorized into one of two roles: basic or advanced users. Basic users gain access to the DWH data by logging into a secure SharePoint site where they can view and download content, but are not allowed to contribute content. Once in the basic user site, users can choose to view County Health Snapshot PDF reports or corresponding text data files for a select county by year or view a predetermined set of reports by content area. These content area specific reports are pivot tables contained in Excel workbooks which access the DWH cubes via Excel Web Services. Each report has a predetermined set of available data attributes as determined by the Excel workbook publisher. Copies of workbooks can be downloaded locally; however, data connections are severed, providing a point-in-time snapshot of the data. Each workbook contains a worksheet for indicator information, county-level data and state-level data. Measures are reported as counts, rates and percentages.

Advanced users are granted additional unrestricted access to browse all content area cubes using an SQL Server Analysis Services (SSAS) connection in Excel. In order to access this connection, an advanced user must be locally connected to the IDPH network or remotely connect to the IDPH network using a VPN and token-authentication. Excel connection templates are available to advanced users on a mapped network drive (typically W:\). Whereas basic users are limited to a predetermined set of data attributes, advanced users have access to all attributes in each cube and browse the cubes using Excel pivot tables. Advanced users can then utilize all the native Excel functionality for charting and graphing. Additionally, using pivot table functions, users can change the display of measures. Data are not suppressed for advanced users.

Expected Results:

What are the tangible and intangible benefits of this purchase for this agency and/or state government?

Tangible and Intangible benefits of the DWH/EPHT project

Upgrade to SharePoint 2013	
Tangible benefits	Updating technical infrastructure and upgrading to SharePoint 2013 has potential benefit to IDPH programs currently using or that anticipate using SharePoint including the DWH, Bureau of Finance, the Iowa Health Information Exchange, and the Research and Ethics Review Committee. We have had numerous programmatic requests in addition to those listed to upgrade to SP2013.
Intangible benefits	The upgrade will improve usability of SharePoint, and will allow for use of new development tools (e.g., Performance Point). The upgrade also keeps us up-to-date with technology and provides additional business intelligence (BI) capabilities not previously available in 2007.
Establishment of a data mart	
Tangible benefits	IDPH is redesigning the back-end architecture of the DWH to meet the data management needs of internal staff. As datasets are provided to Information Management (IM), source files are being created for access by internal staff. The source files will be read-write protected and access will be tracked by an audit trail. The mart will also host data files that comprise the existing DWH.
Intangible benefits	IDPH staff need a centralized repository for storing large data files, which will eliminate the need for staff to host disparate files on their individual computers. There will also be a reduction in staff time spent searching for the "owners" of various datasets, when trying to fulfill a job-related data need.
Development of a secure portal for access to IDPH data	
Tangible benefits	Though IDPH has an existing data warehouse with secure user access, the warehouse will be redesigned to include additional datasets, better metadata, improved reporting functionality, and standard measures for data display (i.e., NCDM).
Intangible benefits	This project will expand access to environmental health specialists, researchers, and other stakeholders seeking public health data. Expanded access will result in better customer service as data requests come into the department on an individual basis and are tasked to various programs depending on the request. Centralizing these requests and negating the need for repeated requests will save time and efforts currently used to respond to individual requests.
Development of a public portal for access to IDPH data	

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Tangible benefits	As previously stated, the EPHT project requires public access to environmental health data through a web portal. The portal will enable public users to interact with data through parameterized and canned reports. Alike the secure portal, data accessible in the public portal will include datasets currently in the DWH.
Intangible benefits	A public portal will improve agency transparency, access to data and information frequently requested of agency staff.

Can these benefits be quantified in financial terms? If yes, please explain.
The financial benefits will initially be countered by the cost. However, the department is assured that cost-savings will result if the tangible goals, detailed in the previous sections, are achieved. Savings will result from less staff time used accessing data, a reduction in the number of errors in data release and management, and time spent responding to public requests for data.

How will you be more effective as a result of this purchase?
There are a number of effectiveness measures and efficiencies achieved as a result of this project.

- Public access to health data will benefit persons seeking health information, public health partners looking to use health data in the development or evaluation of health improvement plans, and will help provide a hypothesis-generating tool for researchers reviewing data for health problems to explore.
- Broad access to environmental health data will be provided to the public, state public health agencies, national public health partners (e.g., CDC, EPA), and other stakeholders.
- Centralized source data in the data mart will negate the need for multiple staff to manage disparate source files of the same data subject.
- Upgrades to the architecture and data management within Information Management will improve customer service within the agency, reduce time spent responding to data requests, and will allow for more centralized data management.
- We will have strengthened our data security by removing copies of confidential data from individual user computers. IDPH will be able to audit who accesses what data, when. We currently have no tracking mechanism for who within the department is accessing and maintaining datasets.

How will service to your customers be enhanced as a result of this purchase?
Service enhancement may be detailed in terms of the two major groups of stakeholders anticipated to benefit from this project- internal IDPH staff, and external, public users.

Our external stakeholders will have access to a wealth of data not previously provided without individual request. We are working to design a solution that is useful and intuitive. Assessments conducted in the fall of 2011 and community conversations have guided the design process.

Internal staff will benefit from having a centralized repository for department data. Staff will no longer have to make multiple requests to different individuals throughout the department to gain access to data.

<u>Testing and Acceptance</u>:
IDPH IM staff have been identified as responsible for testing and acceptance of deliverables in coordination with the business users- the EPHT staff and the DWH Coordinator.

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Some of the Interested Parties:
IDPH, external public health partners, general public, CDC

Some of the Recipients of this Service:
Internal IDPH staff, local public health agencies, environmental health professionals, academic researchers, and the public

Standards:
All state IT standards have been included in the business requirements document and will be followed, as part of a contractual obligation, by the contractor and any subcontractors.

Architecture:
The solution will comply with applicable Enterprise and Agency standards. The solution will use existing DPH infrastructure including integration with the existing DPH Data Warehouse built on a SQL platform.

Business Continuity / Disaster Recovery:
Since the application will use existing DPH infrastructure, it will be addressed as part of the overall DPH plan.

Additional information relevant to the IOWAccess request:
The original concept paper submitted and approved in May 2012 included a contractual obligation of $297,000. Since that time, the project estimate has grown to $497,000. A series of decisions have resulted in the increased amount.

1) **Decision to leverage SharePoint 2013 as it is the most recent technology available**. This would prevent the anticipated expense of upgrading the current 2007 solution to 2010 then to 2013. In order to do that, we must invest additional funds to ensure the 2013 product and accompanying business intelligence tools are configured to meet our needs. We believe removing the intermediary step of upgrading to 2010 will result in a significant cost savings in the coming years.

2) **Decision to emphasize the features of the public portal.** We have a strong public user need to access a greater number of datasets than previously identified. To meet user needs, we are loading additional datasets including child blood lead, housing, and poverty. We are also targeting a user need to display health indicators formed from the data included in the new warehouse application. For example, local public health agencies and non-profit hospitals use indicators in conducting community health needs assessments, required to maintain funding and non-profit status as determined by the IRS. This approach will require significantly more developer hours than previously thought.

Note regarding DATAShare
We held a discussion of the potential to integrate with DATAShare last spring, but determined the application could not meet our needs for a public portal. Per Iowa Administrative Code and constraints in the Health Insurance Portability and Accountability Act (HIPPA), health data displays must protect against the identification of a person. Our department's Assistant Attorney General did not approve the use of an open-source code website for health data display. However, we are actively working with DATAShare to contribute information not bound by privacy and security laws.

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(NOTE: The following comments and approval are copied from the review of concept paper # 210 to aid the review of # 235)

Recommendations from Joint Chief Information Officers/DAS IT Procurement Review Committee members:

NOTE: *Where applicable, all DAS GSE Procurement and IA Administrative Code 11-105 and 11-106 requirements and procedures are to be followed. Reference: http://das.gse.iowa.gov/procurement/, specifically: http://das.gse.iowa.gov/procurement/adminrules/.*

Duplication recommendation from the JCIO to DAS (from 4 of 11 JCIO members):

a) Is there duplication within Government? *(Please identify duplication within your agency, as well as within the enterprise)* **No.**
b) Can an existing program be modified to address a new need? **No.**
c) Do you have any similar program in existence? **No.**
d) Have you sought IT procurements for similar programs in the past? **No.**
e) Do you have purchasing documents for similar programs? **No.**
f) Do you have similar purchasing documents that could be used as a starting point for this program? **No.**
g) Is there anything you could provide that could assist the agency with this IT procurement? **No.**
h) Are there alternatives available to the agencies? **No.**

Recommendation of the JCIO to the DAS IT Procurement Review Committee:

Authorize this IT procurement   Yes _X_ No ___
Alternatives suggested by the JCIO
   (see comments below)   Yes ___ No _X_

Additional comments from JCIO members:

DOT: DOT is licensed for SharePoint 2010 for the purpose of document sharing and collaboration. DOT currently does not use the SharePoint platform to integrate with business applications or other Data Warehouses outside of the SQL Server database that houses the standard SharePoint content.

Recommendation of the DAS IT Procurement Review Committee to the DAS Director:

Authorize this IT procurement   Yes _X_ No ___
Alternatives suggested by the committee
   (see comments below)   Yes ___ No _X_

Additional comments from committee members:

The committee's recommendation included the following:

- The committee agrees with the procurement's intent, but the legal means of the procurement are to be recommended by the AG's Office.

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- Also, DPH will forward the AG's Office recommendation to DAS to be included with the other documentation.

Recommendation provided by Heather Adams, Assistant Attorney General:

I have reviewed and approve the procurement of the EPHT Data Warehouse system through (1) an interstate agreement with the state of Montana's Office of Public Instruction to have access to Montana's data warehouse system and (2) an agreement with Montana's current contractor to modify the Montana system for Iowa's use. Iowa law authorizes the following exemptions from competitive procurement processes and it is my opinion that the proposed procurement is authorized by these rules.

First, Iowa law authorizes an Iowa state agency to enter into an agreement with a state agency of another state to procure a service without utilizing the competitive procurement process: "In the event another governmental entity has resources available to supply a service sought by a state agency, the state agency may enter into an intergovernmental agreement with the other governmental entity and is not required to use competitive selection." 11 IAC 106.4. "Governmental entity" is defined to include "any unit of another state government." 11 IAC 105.2. The state of Montana's Office of Public Instruction constitutes a "governmental entity," and the Iowa Department of Public Health is authorized to enter into an agreement with the Montana agency which would authorize IDPH to have access to components of Montana's Longitudinal Data System (GEMS) and to modify the System to support Iowa's Environmental Public Health Data Warehouse.

Additionally, Iowa law authorizes the following exemption from the competitive procurement process: "Procurement based on competition managed by other governmental entities. …The department may utilize a current contract, agreement, or purchase order issued by a governmental entity to …make a purchase without further competition." 11 IAC 105.4(4). I have reviewed the procurement process utilized by the State of Montana to purchase the GEMS system, including the Request for Proposal seeking contractors for developing a longitudinal state data system and data warehouse database, and find that the competitive process utilized by Montana is substantially similar to that utilized in Iowa. The contract appears to have been awarded in a fair and competitive manner, and IDPH should be authorized to utilize Montana's contract to make a purchase of services from Montana's contractor to modify their data system for Iowa's use without further competition.

DAS Director's action:
Authorize this IT procurement   Yes __X__   No ____

The above IT procurement concept approved by Director Carroll on __7/3/12__

Comments: **None.**

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Recommendations from the State CIO:

NOTE: *Where applicable, all DAS GSE Procurement and IA Administrative Code 11-105 and 11-106 requirements and procedures are to be followed. Reference: http://das.gse.iowa.gov/procurement/, specifically: http://das.gse.iowa.gov/procurement/adminrules/.*

Duplication recommendation from the State CIO to the DAS Director:

a) Is there duplication within Government? *(Please identify duplication at the agency level, as well as within the enterprise)*
b) Can an existing program be modified to address a new need?
c) Do you have any similar program in existence?
d) Have you sought IT procurements for similar programs in the past?
e) Do you have purchasing documents for similar programs?
f) Do you have similar purchasing documents that could be used as a starting point for this program?
g) Is there anything you could provide that could assist the agency with this IT procurement?
h) Are there alternatives available to the agencies?

NOTE: The agency withdrew the concept paper during the review process based on funding requirements for Iowa Access funds.

Recommendation of the State CIO to the DAS Director:

Authorize this IT procurement   Yes ___ No ___
Alternatives suggested by the State CIO
    (see comments below)   Yes ___ No ___

Additional comments from the State CIO:

DAS Director's action:
Authorize this IT procurement   Yes ___ No ___

DAS Director's signature and date:

_____